

ATTACHMENT A

Remarks

By this Amendment, independent claim 1 has been amended to better define the invention. It is submitted that the present application is in condition for allowance for the following reasons.

In paragraph 3 of the outstanding Office Action, the Examiner rejects independent claim 1 together with dependent claims 2, 9, 11, 12, as well as independent claims 24 and 44 as unpatentable over Batchelder in view of Hill. The Examiner contends that the limitations of these claims are either met by or obvious over Batchelder, apart from light from the AO beam splitter being deviated based upon either polarization or wavelength, but that this feature is taught by Hill. In effect, the Examiner contends that it would have been obvious to the ordinary skilled artist to employ the light deviation of Hill (based upon either wavelength or polarization) to allow examination of sample features visible only via wavelength or polarization differentiation in the system of Batchelder.

The Examiner's citation of Batchelder was discussed in detail in the Office Action of 3 September 2003, and this discussion refers to the embodiment shown in figure 4e. That figure is said to disclose a confocal microscope including a coherent light source (410), a beam splitter (460), light condenser (310/312), and a light receiving means (420), wherein return light from the sample is deviated by an angle small relative to 90°.

However, figure 4e, as described from column 14 line 6, depicts a Linnik interferometer, comprising a Michelson two-arm interferometer. Consequently, light returning from wafer 110 or reference wafer 110' interferes within AO cell 460, and the

interference pattern is detected by photo detector 420. The rays shown in figure 4 between AO cell 460 and photo detector 420 are therefore not undeflected return light from wafer 110 or deflected return light from reference wafer 110', but rather represent that portion of the resulting interference pattern that is detectable by photo detector 420 owing to its position and solid angle.

As is explained from column 15 line 19,

the phase of the beat between the reflected sample and reference beams is substantially equal to the phase difference between the beams which is caused by the difference in the reflective properties of the sample and reference wafers.

Thus, the light detected by the photo detector 420 comprises a broad interference pattern generated at the AO cell 460 that is merely sampled by the photo detector 420; photo detector 420 is thus not "aligned" or otherwise positioned to detect return light deflected through "an angle to the incident beam that is small relative to 90°". Rather, it is located merely to sample an interference pattern.

The present invention, on the other hand, defines that

light returning from said sample and incident of said beam splitter is deviated by said beam splitter by an angle to said incident beam that is small relative to 90° and is then received by said light receiving means [emphasis added].

It is thus submitted that this is not an apt description of the optical manipulation taught by Batchelder which uses a beam splitter to form an interference pattern rather than merely to deviate light in the manner defined in claim 1 as noted above.

In addition, the embodiment of figure 4e of Batchelder is not an imaging system but rather an interferometer. It may be usable to produce an interference map of

sample wafer 110, but it will not produce an image thereof. This distinction has been emphasized by the amendment made herein to claim 1.

The Examiner has already appreciated that claim 1 is novel over the disclosure of Batchelder, but the above comments illustrate how very distinct is the disclosure of Batchelder from the present invention. As a consequence, it is submitted that combining the teaching of Batchelder with that of Hill would not produce or suggest the present invention. It should also be noted that Hill is also concerned with interferometry, so a combination of both documents could only lead to some interferometer or interferometry technique, not to the imaging of a sample as claimed in the present invention.

In addition, however, it is submitted that it is not valid to combine the teachings of Batchelder and Hill. The system of Hill is adapted for measuring distance by interferometry, whilst Batchelder teaches a system described as an optical metrology system for measuring internal features of an object having a relatively high refractive index, and operates on the principle of dark field microscopy. Distance measuring interferometry and dark field microscopy—though both employing interferometry—are divergent disciplines, so the skilled person in one is exceedingly unlikely to turn to the teaching of the other.

In any event it is generally submitted that these documents would not be regarded as relevant by a person skilled in the field of confocal endoscopy or microscopy as taught by the present invention and claimed in the present application.

For this reason also it is submitted that the combination of Batchelder, Hill and Harris is untenable as a citation against the patentability of claims 10 and 18 as set forth

in paragraph 4. As observed above, Batchelder and Hill concern interferometry whereas Harris is concerned with confocal microscopy. It is thus submitted that claims 10 and 18 are patentable over the combination of cited documents.

With respect to claim 44, although the configuration of claim 44 differs from that of claim 1, it includes the step of detecting at least some of said portion of said beam of returning light, where Batchelder defines the detection of an interference pattern, not a beam of returning light. In addition, the same remarks concerning the combinability of Batchelder and Hill apply in the case of claim 44. Accordingly, it is submitted that claim 44 is also patentable over the cited combination of documents.

In view all of the above, it is submitted that independent claims 1, 24 and 44 are all allowable over Batchelder in view of Hill. And at least for these same reasons, it is submitted that the claims dependent from these independent claims are also allowable.

For all of the foregoing reasons, it is submitted that the present application is in condition for allowance and such action is solicited.